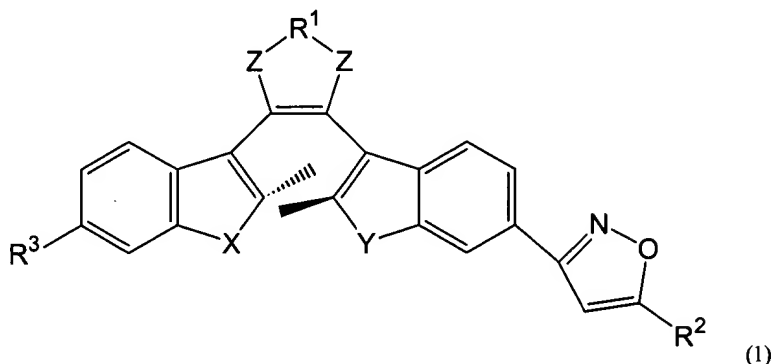


IN THE CLAIMS

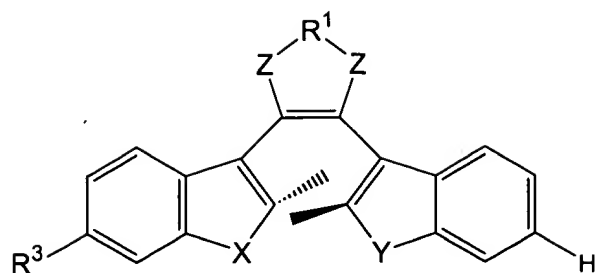
1. (CURRENTLY AMENDED) A photochromic diarylethene compound having isoxazole group expressed in the following formula (1),



wherein R^1 is a direct bond, ~~O, or C_1-C_3 alkylene optionally substituted with fluoro~~; R^2 is a hydrogen atom, $(CR^4H)_nOH$ or $C_6(R^5)_mH_l$; R^3 is selected from the group consisting of a hydrogen atom, phenylisoxazole, hydroxymethylisoxazole, acetyl, hydroxy, and phenyl; R^4 is hydrogen or C_1-C_{10} alkyl; R^5 is chloro, nitro, bromo, or the same as R^4 ; X and Y are ~~independently O, N, or S~~; Z is methylene optionally substituted with fluoro or carbonyl; and n, m and l are an integer of 1 to 5.

2. (CURRENTLY AMENDED) A method for preparing the diarylethene compound of claim 1, comprising the steps:

- (I) formylating diarylethene compound of formula (2);
- (ii) reacting the formylated compound with $NH_2OH \cdot HCl$ and aqueous basic solution in series and reacting with N-chlorosuccinimide (NCS); and
- (iii) reacting with acetylene compound substituted with R^2 in the presence of base catalyst,



(2)

wherein R^1 is a direct bond, ~~O or C, C-alkylene optionally substituted with fluoro~~; R^3 is selected from the group consisting of a hydrogen atom, phenylisoxazole, hydroxymethylisoxazole, acetyl, hydroxy, and phenyl; X and Y are ~~independently O, N, or S~~; and Z is methylene optionally substituted with a fluoro atom or carbonyl.

3. (WITHDRAWN)

4. (WITHDRAWN)

5. (WITHDRAWN)

6. (WITHDRAWN)

7. (WITHDRAWN)

8. (WITHDRAWN)

9. (WITHDRAWN)

10. (WITHDRAWN)

11. (NEW) A compound selected from the group consisting of 1-(6'-(5-hydroxymethylisoxazol)-2'-methylbenzo[b]thiophen-3'-yl)-2-(2''-methylbenzo[b]thiophen-3'-yl)hexafluorocyclopentene, 1-(6'-(5-phenylisoxazol)-2'-methylbenzo[b]thiophen-3'-yl)-2-(2''-methylbenzo[b]thiophen-3'-yl)hexafluorocyclopentene, and di(6'-phenylisoxazol-2'-methylbenzo[b]thiophen-3'-yl)hexafluorocyclopentene.